AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning at line 3 of page 7 as follows:

-- In another construction, Fig. 2, each emitter 14a, 16a, includes a mirror 32 (where the emitters are VCSELs), as shown with respect to emitter 14a, an active portion 34 and a pair of contacts or bumps 36 and 38 which serve in the flip chip bump bonding of the gallium arsenide chip that contains the emitters, detectors, and shared waveguide with the silicon chip 30 which contains the CMOS substrate and circuitry. Chip 30 may also be a SiGe, InP, or GaAs based ASIC or a multi-chip module/fanout substrate. Also shown in Fig. 2 are detectors 18a and 20a; each detector as indicated at detector 18a includes a P section 40, one N section 42 and one I section 44 and an epoxy support 46 which supports the active section 48 surrounded by Bragg filter 22a. Both the emitter 14a, 16a and detectors 18a and 20a may be P-I-N diodes. The flip chip bonding technique for the gallium arsenide chip 25 carrying the optical components and the silicon chip 30 containing the CMOS circuitry is disclosed more fully in co-pending U.S. Patent Applications Nos. 09/653,369 (now U.S. Patent No. 6,337,265); 09/654,425 (now U.S. Patent No. 6,316,286); and 09/653,378 (now U.S. Patent No. 6,344,664), all filed on September 1, 2000, assigned to the assignee and incorporated herein by reference in their entirety. An opaque barrier 60 is placed around detector 18a to isolate detector 18a from undesirable light. The shared waveguide 12a may be formed from the residual gallium arsenide present as a result of gallium arsenide chip 25 by simply not etching away all the remaining gallium arsenide after the flip chip bonding has been effected but rather leaving some there to act as the shared waveguide. While barrier 60 may extend completely between detector 18a and emitters 14a and 16a this is not a necessary limitation of the invention as for example that area could be filled by epoxy or some other filter 62 as shown with respect to detector 20a --

Please amend the paragraph beginning at line 21 of page 8 as follows:

-- In Figs. 1-4, the radiation scattered from the emitter to the detectors is generally leakage radiation out the side of the VCSELS which travels generally in a planar field in a generally planar shaped shared ~~wave guide~~waveguide 12 but none of these aspects are limitations on--

Please amend the paragraph beginning at line 3 of page 10 as follows:

-- Another control layer 94g, Fig. 8 can be fabricated directly on CMOS layer ~~50g~~ 30g to redirect the radiation by 90 degrees leaving emitters 14g and 16g and returning to detectors 18g and 20g as shown more clearly in Fig. 9 where the redirection of light is achieved by the control structure and scattering by the shared waveguide. The underside ~~130~~ 130g of layer 94g may be a reflective material or may be coated with a reflective material, for example, a metal such as silver to enhance its reflective properties. Although control layer 94g is shown as being fabricated on the CMOS layer ~~50g~~30g, it may also be fabricated directly on the shared waveguide.--

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